Decoding choice: Women, Motherhood, and Academic Career Paths

Research Project

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ABSTRACT.

This paper investigates the impact of women's entry into academia on their fertility decisions across all research disciplines in France. I plan to use a novel dataset including theses defended in French universities, data from Scopus, and the Conseil National des Universités (CNU) to study how the time before achieving a stable position in academia affects women and men researchers and how it affects fertility among female researchers. These findings would contribute to understanding the complex interplay between family dynamics and professional pursuits, providing valuable insights for both researchers and policymakers.

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"Not all women want to have children, of course. And some women may be happy delaying childbirth. But if you want more women, it helps to have more women of all types." JOHN H. COCHRANE, March 2024

1 Introduction

Women are under-represented in research and the share of female researchers varies significantly across disciplines, as reported by the *UNESCO Science Report*. Recent work, Kim and Moser (2021) provides insights into the challenges faced by mothers in science and the potential loss in participation. These findings underscore the importance of ongoing research and policy interventions to support women researchers and address the complex interplay between family dynamics and academic pursuits. The purpose of this project is to investigate the impact of women's entry into academia on their fertility decisions across different research disciplines in France. I plan to use a novel dataset including all theses defended in French universities from *Thèses.fr*, bibliometric data from Scopus, and data the Conseil National des Universités (CNU). First, I want to study how men and women experience different effects from the time it takes to secure a stable academic job. Second, if the availability of junior researcher positions impact the number of children female researchers have after obtaining a stable academic job.

2 Contribution

The literature on the relationship between women's research productivity and the presence of young children presents a complex picture. Long (1990), Kyvik (1990), and Kyvik and Teigen. (1996), have suggested a negative effect of young children on women's research productivity. Conversely, research by Kim and Moser (2021) and Stack (2004) proposes a positive effect, suggesting that the responsibility of children may motivate researchers, particularly women, to work harder. Additionally, Fox (2005) argues that women often have children when their careers are well-established, potentially leading to positive effects on self-esteem and professional networks. However, Ginther and Kahn (2004) and Sax and Dicrisi (2002) argue that there may be no significant effect, suggesting that women typically decide to have children when they feel financially secure. Furthermore, the COVID-19 pandemic has added another layer to this discussion, as highlighted by Myers et al. (2020) and Deryugina et al. (2021) who emphasize that female scientists with young children have experienced a significant decline in research time

during the pandemic. My contribution addresses the lack of comparative studies in economics across academic disciplines. These findings would contribute to understanding the complex interplay between family dynamics and academic pursuits.

3 French Academic Context

In the typical French academic pathway, individuals first obtain their PhD and subsequently apply for qualification. This qualification necessitates the successful defense of the PhD thesis and the publication of at least one academic paper (no matter the journal). Once acquired, this qualification remains valid for four years. Annually, candidates apply for Maître de Conférences (MCF) positions, which are centralized through the Galaxy platform. However, it's important to note that in specific cases, individuals from abroad may be eligible to apply for MCF positions without the qualification. This exception aside, possessing the qualification is generally a prerequisite for pursuing MCF roles within the French academic framework. From MCF or *junior researcher* position, individuals may become senior researchers, known as Professeurs des Université (PR), by successfully participating in another competitive examination later in their career.

4 Data

I describe all the data sources I plan to use in this study in the following parts. Figure 1 illustrates how I aim to construct a comprehensive profile using the data set for each individual, encompassing career trajectories, and only for women, their number of children.

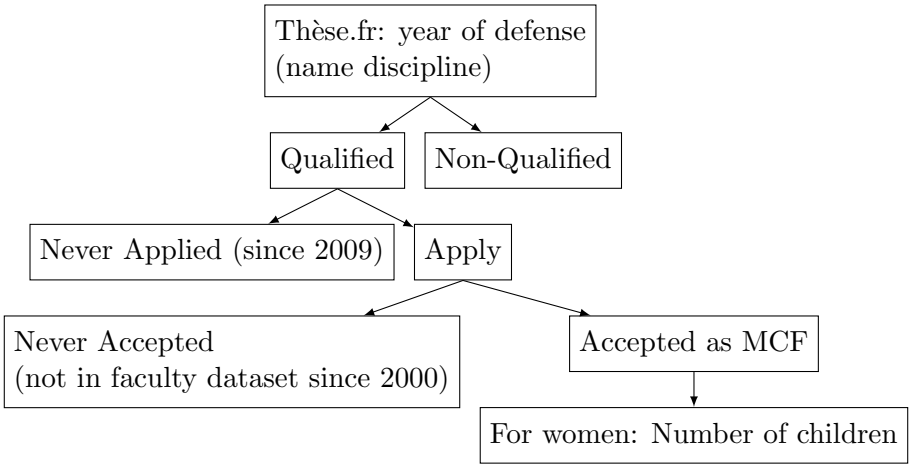

Figure 1: Summary of Data

4.1 Theses.fr

All theses defended in French universities from 1988 to 2021. For each thesis, I have information on the discipline of study, the defense year, the university affiliation, and the names of the PhD student and supervisor(s).

4.2 Scopus

To provide information on research productivity for both PhD students and supervisors, I use a bibliometric dataset from Scopus, which gives information on publications, journals, year of publication, co-authors, and affiliations until today (2023). This procedure requires the removal of overly common names to avoid mismatches which reduces the final sample to 335,000 theses.

4.3 CNU Data

The CNU data[1] provides a comprehensive record of acceptance and rejection decisions for researchers seeking qualifications as MCF (Maître de Conférence) and PR (Professeur des Universités) from 2000 to 2023. It includes information on birth date, age, name, gender, and discipline associated with a candidate number. For each candidate, I track from 2009 to 2023 all their job applications of each candidate within the research field, noting the types of positions applied for and whether they were accepted. From 2000 to 2022 I have the list of all researchers (MCF or PR) in each French university affiliation with information on gender, position, discipline, name, and birth date.

4.4 Survey: Researchers and Fertility

This survey is modeled after the research conducted by Antecol et al. (2018). Participants will be asked to provide information on the number of children they have, including the year of birth for each child. Additionally, respondents will indicate whether their partner is also engaged in academia.

5 Empirical Framework

The research approach focuses on two main questions: First, do men and women experience different effects from the time it takes to secure a stable academic job? Second, does the

[1] Conseil National des Universités

availability of junior researcher positions impact the number of children female researchers have after obtaining a stable academic job?

First, I want to measure the difference in the probability of pursuing academia between men and women having completed their PhD. I will use the number of job openings for MCF as a shock to see if the probability of pursuing academia varies differently for men and women if the number of job openings at a year t is higher or lower. The identification strategy can be seen as a difference-in-difference. Both men and women experience the treatment, the equation is as follow:

$$Academia_{it} = \sum_{l} \beta_i D_i^l \times Gender_i + \gamma_i + \mu_t + \epsilon$$

Where $Academia_{it}$ is a dummy variable equal to 1 if the individual i gets a stable position of MCF. D_i^l corresponds to the event time dummies. l designates the distance to the average number of job openings. $Gender_i$ is a dummy that equals 1 if the individual i is a woman, 0 otherwise. μ_i controls for individual fixed-effect and γ_i controls for time-variant characteristics.

Second, I want to explore how the time spent before achieving a stable position affects the likelihood of having children for women. I plan to use the number of MCF job openings as an instrument variable. I estimate the following equation:

$$Fertility_{idt+5} = \beta_0 + \beta_1 \hat{T_{it}} + \beta_2 age_{it}^2 + \nu_d + \epsilon_{idt}$$

Where $Fertility_{idt+5}$ is a dummy variable equal to one if the female researcher has at least one child between the year of having the stable position of MCF and 5 years after. $\hat{T_{it}}$ is the time before having a stable position: the number of years between completing the PhD and starting as MCF, I instrument this variable using the number of MCF job openings. I control for the age of each individual at the time t of having a stable MCF position.

6 Conclusion

This research project contributes significantly to the existing literature by creating a novel dataset that provides evidence on the relationship between fertility, and women's entry into academia.

By offering insights into the impact of family planning decisions on academic careers, I aim to address a critical gap in knowledge and provide guidance for young researchers contemplating entry into academia.

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